



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/985,763	11/06/2001	Paul Kalapathy	108339-00097	4336
32294	7590	04/26/2006	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P.			CHO, HONG SOL	
14TH FLOOR			ART UNIT	
8000 TOWERS CRESCENT			PAPER NUMBER	
TYSONS CORNER, VA 22182			2616	

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5

Office Action Summary	Application No.		Applicant(s)	
	09/985,763		KALAPATHY ET AL.	
	Examiner		Art Unit	
	Hong Cho		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/14/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The following is in response to the amendments filed on 01/30/2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Michels et al (U.S 6453358), hereinafter referred to as Michels.

Re claims 1, 7, 13, and 16, Michels discloses a search device consisting of two binary search engines with a lookup table (*a table or an address resolution (ARL) table as in claim 17 having a plurality of entries*, figure 3, element 58; column 5, lines 39-40), a first stage memory (*a cache or ARL cache table as in claim 17*, figure 3, element 70)

that does not contain the entire lookup table (*having a subset of entries of said plurality of entries of the table*, column 6, lines 5-10) where the first binary search engine (figure 3, element 66) is connected to a stage 1 memory (figure 3, element 70) and the second binary search engine (figure 3, element 68) is connected to a primary memory (figure 3, element 58) (*a search engine is connected to the table or ARL table as in claim 17 and the cache or ARL cache table as in claim 17*). The first binary search engine performs a predetermined number of iteration in searching a lookup table in stage 1 memory (*a search engine configured to first search said cache or ARL cache table as in claim 17*) and the second binary search engine performs binary search on a lookup table in primary memory based on the results from the first binary search engine (*and then search said table or ARL table as in claim 17 based on search results of said cache, said search engine connected to said table and said cache*, figure 3).

Re claims 2, 8, and 17, Michels discloses a search engine with a first binary search engine (*a search stage zero segment*, figure 3, element 66) connected to a stage 1 memory (*cache*, figure 3, element 70) and a second binary search engine (*a search stage one segment*, figure 3, element 68) connected to a primary memory (*table*, figure 3, element 58) (*a search engine comprising a search stage zero segment configured to search said cache in said first number of search cycles, said search stage zero segment connected to said cache, and a search stage one segment configured to search said table in a second number of search cycles based on search results of said cache, said search stage one segment connected to said search stage zero segment and said table*, column 3, lines 9-16; figure 3; column 5, lines 33-36).

Re claims 3, 5, 9, 11, 14, 18, and 20, Michels inherently discloses that the first number of search cycles used to search the cache is less than the second number of search cycles used to search the table. Since the first stage memory contains only 256 entries out of total 64000 entries, it will take less time to search 256 entries than searching 64000 entries.

Re claims 4, 6, 10, 12, 15, 19, and 21, Michels discloses that the first binary search engine performs the first eight iterations of the search and the second binary search engine performs the last eight iterations (column 6, lines 2-5, *the first number of search cycles used to search the cache is equal to the second number of search cycles used to search the table*).

Response to Arguments

4. Upon the review of the filed record, the Examiner found out that Michels reference is proper to reapply for this pending application. The Examiner considers two binary search engines (figure 3, elements 66 and 68) as a search device. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc
Hong Cho
Patent Examiner
4/19/2006


CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600